

Date: Thu, 4 Mar 93 18:40:32 PST
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V93 #283
To: Info-Hams

Info-Hams Digest Thu, 4 Mar 93 Volume 93 : Issue 283

Today's Topics:

 ALERT: Satellite Proton Event Alert
 ARRL BULLETIN 18 ARLB018
 Daily Solar Geophysical Data Broadcast for 03 March
 FAQ: Supermorse for the PC?
 Ground planes and vertical dipoles (4 msgs)
 Periphex SUCKS!
 Tuned Anode Lines
 Want to make a lot of money teaching ham radio classes?
 WARNING: Potential Major Solar Flare Warning
 WD8DAS synch detector - Impressions?
 Where's Garfield?

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 4 Mar 93 18:48:44 GMT
From: news-mail-gateway@ucsd.edu
Subject: ALERT: Satellite Proton Event Alert
To: info-hams@ucsd.edu

/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\

SATELLITE PROTON EVENT ALERT

ISSUED: 16:30 UT, 04 MARCH

/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\

ATTENTION:

A satellite proton event at greater than 10 MeV began at 15:05 UTC on 04 March. Protons began arriving around 13:00 UT. There appears to have been a weak enhancement of protons at greater than 100 MeV as well. Protons are expected to remain enhanced for the next several days at least. There is a lingering risk for additional proton enhancements throughout the next week to ten days.

Polar Cap Absorption (PCA) is becoming mildly enhanced. More serious PCA could be observed throughout the coming week if influential proton flares erupt. Users of the OMEGA navigation system over polar paths, as well as radio operators reliant on polar or high-latitude path propagation, should be aware of the increased threat for increased signal absorption and/or loss of communication. Errors with OMEGA navigation signals are becoming increasingly likely as proton penetration into the polar ionosphere increases.

** End of Warning **

Date: 3 Mar 93 23:01:14 GMT
From: usc!hela.iti.org!cs.widener.edu!dsinc!ub!csn!magnus.acs.ohio-state.edu!
cis.ohio-state.edu!mstar!n8emr!bulletin@network.UCSD.EDU
Subject: ARRL BULLETIN 18 ARLB018
To: info-hams@ucsd.edu

=====
| Automatic relayed from packet radio via |
| N8EMR's Ham BBS, 614-895-2553 |
=====

ZCZC AG59
QST DE W1AW
ARRL BULLETIN 18 ARLB018
FROM ARRL HEADQUARTERS
NEWINGTON CT FEBRUARY 24, 1993
TO ALL RADIO AMATEURS

SB QST ARL ARLB01R:930225/0653 @:KA5LZG.#STX.TX.USA.NOAM Corpus Christi #:3417
Z:78413
R:930225/0536Z @:W5IFP.#SAT.TX.USA.NOAM #:34514 \$:8674_AH6BW
R:930224/2343z @:WB5MSB.#CENAL.AL.USA.NOAM [JNOS] Auburn Univ. #:44161 Z:36849

ZCZC AG59
QST DE W1AW
ARRL BULLETIN 18 ARLB018
FROM ARRL HEADQUARTERS
NEWINGTON CT FEBRUARY 24, 1993
TO ALL RADIO AMATEURS

SB QST ARL ARLB018
ARLB018 CONTEST UPDATE

DATE/TIME CHANGE FOR 902, 1296 AND 2304 MHZ SPRING SPRINTS

ACTIVITY IN THE SPRING SPRINTS HAS BEEN SLUMPING OVER THE LAST FEW YEARS, ESPECIALLY ON THE MICROWAVE BANDS. IN THE HOPE OF BOOSTING ACTIVITY IN THE 902, 1296 AND 2304 MHZ SPRING SPRINTS, WE HAVE RESCHEDULED THE TIMES AND DATES. THE THREE SPRINTS ARE SCHEDULED TO RUN SIMU8
ARLB018 CONTEST UPDATE

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AND 432 MHZ WILL REMAIN ON THEIR RESPECTIVE ACTIVITY NIGHTS.

THIS CHANGE SHOULD GIVE MEMBERS THE OPPORTUNITY TO MAKE MORE CONTACTS DURING THE SPRINTS AND AT THE SAME TIME PROMOTE ACTIVITY. IT DOES NOT DISCRIMINATE AGAINST ENTRANTS WHO HAVE EQUIPMENT FOR ONLY ONE OF THE BANDS. THEY CAN STILL COMPETE ON AN EQUAL BASIS WITH THEIR PEERS. MEMBERS WHO WISH TO ENTER ALL THREE SPRINTS HAVE THE OPPORTUNITY TO PASS CONTACTS FROM ONE BAND TO ANOTHER. THREE SIMULTANEOUS SPRINTS, RATHER THAN ONE, SHOULD PROVE TO BE MORE OF AN INCENTIVE FOR PEOPLE TO GO MOUNTAINTOPPING OR TO RARE GRID SQUARES. WE WANT TO MAKE THE SPRINTS MORE FUN BY CREATING MORE ACTIVITY ON THE MICROWAVE BANDS DURING THE CONTEST.
NNNN

Date: 4 Mar 93 06:02:49 GMT
From: news-mail-gateway@ucsd.edu
Subject: Daily Solar Geophysical Data Broadcast for 03 March
To: info-hams@ucsd.edu

!!BEGIN!! (1.0) S.T.D. Solar Geophysical Data Broadcast for DAY 062, 03/03/93
10.7 FLUX=151.1 90-AVG=134 SSN=110 BKI=4344 3333 BAI=019
BGND-XRAY=C1.0 FLU1=5.0E+06 FLU10=2.1E+04 PKI=4454 5343 PAI=027
BOU-DEV=042,039,044,043,036,037,033,030 DEV-AVG=038 NT SWF=00:000
XRAY-MAX= C8.9 @ 0001UT XRAY-MIN= B6.7 @ 1927UT XRAY-AVG= C1.7
NEUTN-MAX= +003% @ 0835UT NEUTN-MIN= -003% @ 0850UT NEUTN-AVG= -0.3%
PCA-MAX= +0.2DB @ 0050UT PCA-MIN= -0.3DB @ 0440UT PCA-AVG= +0.0DB
BOUTF-MAX=55417NT @ 0013UT BOUTF-MIN=55354NT @ 1812UT BOUTF-AVG=55392NT
GOES7-MAX=P:+118NT@ 1908UT GOES7-MIN=N:-010NT@ 0312UT G7-AVG=+067,+045,+010
GOES6-MAX=P:+130NT@ 1909UT GOES6-MIN=E:-001NT@ 1746UT G6-AVG=+081,+018,+059
FLUXFCST=STD:160,165,170;SESC:160,165,170 BAI/PAI-FCST=015,015,015/015,015,020
KFCST=2114 5011 2104 5011 27DAY-AP=009,008 27DAY-KP=3312 2332 2132 1223
WARNINGS=*MAJFLR;*SWF
ALERTS=
!!END-DATA!!

Date: 3 Mar 1993 22:05:29 GMT
From: usc!cs.utexas.edu!qt.cs.utexas.edu!news.Brown.EDU!stout!
robinson@network.UCSD.EDU
Subject: FAQ: Supermorse for the PC?
To: info-hams@ucsd.edu

In article <C3AFpB.H3s@panix.com> oppedah1@panix.com (Carl Oppedah1) writes:
>In <1n06nj\$lsf@neuromancer.key.amdahl.com> jerryyp@key.amdahl.com (Jerry
Pendleton) writes:

>
 >>Sorry about the wasted bandwidth: I can't find the FAQ and archie
 >>doesn't seem to be any help...
 >
 >>I would like to find a copy of supermorse that runs on a PC and uses
 >>the standard speaker.
 >
 >Super Morse is definitely the right way to learn code!
 >
 >Maybe you would have luck telling archie to look for files that start
 >with SM21? I seem to recall the filename being SM21 something.
 >

SuperMorse is available from "ftp.geo.brown.edu" in /put/hamradio/software
 in the file sm316.zip.

Log in as anonymous, use your username and @ at the Em-amil address prompt (
 i.e. darrin@) as the server is picky about domain names.

Regards, Darrin, N1LLV
 , Darrin E. Robinson (DER31) Hamnet N1LLV 146.700-, 146.880- MHz
 /| Systems Programmer Internet darrin@MIT.EDU
 \| Dist. Computing & Network Services robinson@Planetary.Brown.EDU
 |\ M.I.T. Information Systems ICBMnet 41 29 24 N 71 18 48 W (NPT)
 | / 1 Amherst St. - Rm E40-338 SPANet PGGIPL::ROBINSON (7132)
 ' Cambridge, MA 02139, USA AT&Tnet (617) 253-0131

Date: Wed, 3 Mar 1993 20:13:55 GMT
 From: swrinde!cs.utexas.edu!sdd.hp.com!hpscit.sc.hp.com!hplextra!hpl-opus!hpnmdla!
 alanb@network.UCSD.EDU
 Subject: Ground planes and vertical dipoles
 To: info-hams@ucsd.edu

In rec.radio.amateur.misc, rkarlqu@scd.hp.com (Richard Karlquist) writes:

>Maybe the moral is this:

>1. The pump housing is obviously grounded better than the sum total
 >of you and your neighbor's NEC grounds. Perhaps you ought to sink
 >a ground rod into the well and connect it to the neutral power line.

Actually, the real moral of the story is my neighbor should have run
 THREE wires to the well pump. The third wire should be attached to
 the pump housing. Then when the pump shorted, it would have immediately
 blown his breaker.

AL N1AL

Date: Wed, 3 Mar 1993 20:58:57 GMT
From: usc!sdd.hp.com!hpscit.sc.hp.com!hplextra!hpl-opus!hpnmdla!
alanb@network.UCSD.EDU
Subject: Ground planes and vertical dipoles
To: info-hams@ucsd.edu

In rec.radio.amateur.misc, alanb@hpnmdla.sr.hp.com (Alan Bloom) writes:

```
>          MY          POLE TRANSFORMER          NEIGHBOR'S
>          BREAKER BOX    HOT    CT    HOT          BREAKER BOX
>                                     |    |    |
> <-----BREAKER-----|-----|-----+-----BREAKER----- WELL
> <-----BREAKER-----+-----|-----BREAKER-----+----- PUMP
>                                     |
>          +-----+-----+-----+
>          |          |          |          |
>          GROUND      GROUND      GROUND      GROUND
>                                     |
>                                     FAULT
```

>Since all
>3 ground connections have a non-zero resistance, the actual zero-volt
>point on the pole transformer is somewhere between the center tap
>and the right-hand side.
 ^^^^^

Of course, I meant the left-hand side.

>AL N1AL

Date: Wed, 3 Mar 1993 20:55:47 GMT
From: usc!elroy.jpl.nasa.gov!sdd.hp.com!hpscit.sc.hp.com!hplextra!hpl-opus!
hpnmdla!alanb@network.UCSD.EDU
Subject: Ground planes and vertical dipoles
To: info-hams@ucsd.edu

In rec.radio.amateur.misc, gary@ke4zv.uucp (Gary Coffman) writes:

>In article <14570668@hpnmdla.sr.hp.com> alanb@hpnmdla.sr.hp.com (Alan Bloom)
writes:

>>In rec.radio.amateur.misc, gary@ke4zv.uucp (Gary Coffman) writes:

>>

>>> To outlet

```
>>>      |          +-----+
>>>      |  +---+  3 wire  |          |
```

```

>>> To  +---|   |-----|   |
>>>Ant  =====|=====|   Radio  |
>>>      +--+  |   |         |   |
>>>      |      |   |         |   |
>>>      | Lightning  +-----+
>>>      | arrestor
>>>      |
>>>      -----
>>>      ---
>>>      -
>>

```

>>If the [fuse] box is grounded, than the radio is grounded through the
>>third wire in the power cord. You still have a "ground loop".

>Yes, but the loop current no longer passes *through* your equipment. That's
>the purpose of common point ground window technique.

Of course it does. The loop path is: Earth ground, lightning arrestor,
coax, radio, radio line cord (3rd wire ground), house wiring ground,
fuse box, fuse box earth ground. This assumes you haven't snipped
the safety ground prong from the radio power cord. (Tsk, tsk!)

The above diagram shows an extra wire from the arrestor to power system
ground. This will divert only a portion of the loop current from the
radio, depending on the relative resistance of the two paths.

AL N1AL

Date: Wed, 3 Mar 1993 20:46:17 GMT
From: usc!sdd.hp.com!hpscit.sc.hp.com!hplextra!hpl-opus!hpnmdla!
alanb@network.UCSD.EDU
Subject: Ground planes and vertical dipoles
To: info-hams@ucsd.edu

In rec.radio.amateur.misc, gary@ke4zv.uucp (Gary Coffman) writes:

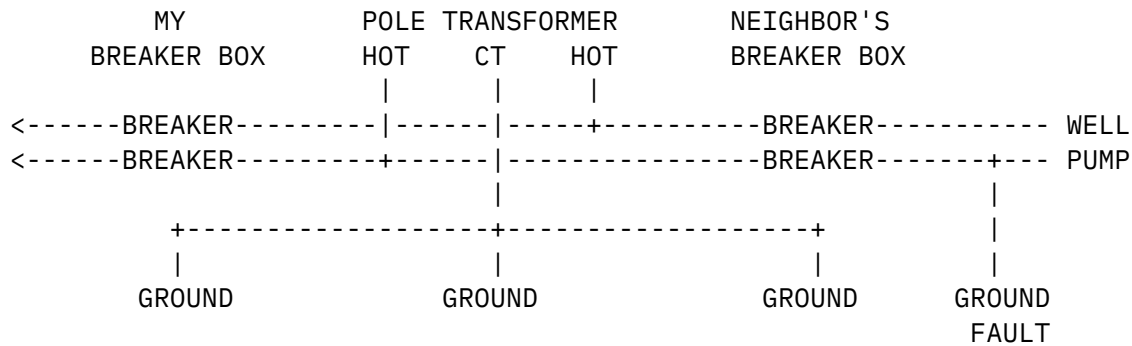
>The pole transformer is not supposed to be grounded. The code says
>that the only ground connection must be at the service entrance
>box to prevent ground loops.

Well you better tell Pacific Gas and Electric that, because all the
pole transformers in the area are grounded. Even if they weren't, you
would still have ground loops since each house is grounded.

>You're calculating incorrectly as well. The calculation is neutral
>to your neighbor's "hot" with a 4 amp draw, your noted current "spark"

>in the original. That implies a ground impedance of >30 ohms between
>*your* ground rods which is outside NEC spec.

Gary, what in the world are you talking about? Let's see if I can
draw a schematic in ASCII:



As you can see, the neutral wire is grounded in three places, the power pole and both houses. One side of the 220-volt line is also earth-grounded at my neighbor's pump due to the short. Since all 3 ground connections have a non-zero resistance, the actual zero-volt point on the pole transformer is somewhere between the center tap and the right-hand side. If I improve my ground, I can move the zero-volt point nearer to center tap. But the well pump is a very good ground, better than I am likely to get with an 8-foot ground rod, so I am fighting a losing battle.

The resistance between the ground fault at the pump, and the total of the other 3 grounds is $R = E/I$, where E is the voltage difference between the two grounds and I is the short-circuit current. If my neighbor's breaker is 20A, the short-circuit current must be less than that. Let's say 15A: $60V / 15A = 4 \text{ ohms}$. Note that this is the SUM of the two resistances, since they are in series. The R of each is less.

To meet code, my neighbor should have had a third ground wire going from fuse box to pump housing. If he had done this, the short would have blown his breaker, and there would have been no problem.

>>>[The short-circuit current] has been passing through one or both of
>>>your meters for as long as the fault has been present.

>>

>>His meter only. The power meter doesn't measure ground currents.

>The power meter measures current delivered to the house whether
>that current winds up in the ground or not. Depending on which
>phase was shorted at the neighbor's house, either you or he could
>have been paying for the current.

But the meter doesn't measure current in the GROUND wire. There is

no short-circuit current flowing in either phase hot wire at my house.

>>The reason

>>for using the 3-wire plug on all equipment is to ensure that all
>>metal in the house is at the same potential. The safety problem occurs
>>when you have one piece of metal grounded to house ground and another
>>grounded to earth ground. If there is a potential difference between
>>the two, you can get shocked if you touch both.

>If you're grounded, say standing

>on a damp concrete floor, and touch the third wire grounded equipment, you
>can still get a shock. That's what GFIs are for.

That's correct. But you want your equipment to be at electrical system ground, not earth ground. Otherwise if you touch your rig and another appliance or a water pipe at the same time, you get zapped. (Plumbing pipes are supposed to be connected to electrical system ground.)

AL N1AL

Date: 3 Mar 93 21:45:45 GMT

From: saimiri.primate.wisc.edu!usenet.coe.montana.edu!news.u.washington.edu!
ns1.nodak.edu!plains!ndsuvml!ud173191@ames.arpa

Subject: Periphex SUCKS!

To: info-hams@ucsd.edu

Just got off the phone with Periphex, and boy, am I pissed! Here's the fiasco: My BP-84S suffers a minor deceleration trauma from about a six-inch drop. Predictably, the battery rail breaks (gotta love those Icom battery rails for the 24AT). So I called Periphex, thinking maybe they'd help, and they tell me it'll cost \$29 EVEN THOUGH THE BATTERY IS STILL UNDER WARRANTY! They basically said "Icom's design flaw; your problem." The thing that particularly irritates me is that they never mention this anywhere.

Our radio club here at U. North Dakota made a group purchase of batteries with a total order of close to six hundred dollars.

I read, in the past few months, the stories of other victims of lousy customer service by these people, but never thought I'd have a problem myself. Well, chalk me up as another victim. One thing's for sure: They'll never see another dime from me or likely any other member of our club, and with the next battery order I might just send them a copy of the invoice and let them know why they didn't get our business.

Is there anything I can do, short of forking over \$29 to get this thing fixed?

Greg Moore N00DQ Tech+
President, Sioux Amateur Radio Club
University of North Dakota

Date: 4 Mar 93 13:55:49 GMT
From: news-mail-gateway@ucsd.edu
Subject: Tuned Anode Lines
To: info-hams@ucsd.edu

Some-one with a two-lines-long address asked for a source of info on how to computer the length of tuned anode lines for a VHF PA. Since the request seemed to come from G-land, I would suggest looking in the RSGB VHF-UHF Manual. They latest edition in my possession (3rd) has info of this sort on page 3.4 and surrounding pages.

73, Bob W30TC

Date: 4 Mar 93 15:09:24 GMT
From: news-mail-gateway@ucsd.edu
Subject: Want to make a lot of money teaching ham radio classes?
To: info-hams@ucsd.edu

> I cannot understand terrorists, their activities do not seem to
>change anyone to their way of thinking, yet they continue. Peaceful
>politicking would probably be more effective in promoting their various
>causes, yet they continue.

probably those seeking political redress of grievances in this manner can't really control those who just like to blow things up.

Date: 4 Mar 93 06:23:13 GMT
From: news-mail-gateway@ucsd.edu
Subject: WARNING: Potential Major Solar Flare Warning
To: info-hams@ucsd.edu

/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\

POTENTIAL MAJOR SOLAR FLARE WARNING

ISSUED: 06:00 UT, 04 MARCH

/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\

PRIMARY CANDIDATE FOR HIGH SOLAR ACTIVITY : REGION 7440 (S07E66@00Z,04MAR)

ESTIMATED POTENTIAL MAGNITUDE OF ENERGETIC ACTIVITY OVER NEXT 7 DAYS						
DAYS	C5.0	M1.0	M5.0	X1.0	X5.0	>X12.0
1(+)	90 %	30 %	25 %	10 %	2 %	1 %
3(+)PG	95 %	50 %	40 %	20 %	5 %	1 %
5()PG	100 %	70 %	60 %	30 %	10 %	2 %
7(-)PG	100 %	90 %	70 %	35 %	15 %	2 %

DAYS = Number of days (from present) into the future (1, 3, 5 and 7 days).

(+) = Primary candidate region expected to GROW and DEVELOP.

() = Primary candidate region expected to STABILIZE or remain STABLE.

(-) = Primary candidate region expected to DECAY and SIMPLIFY.

(x)P = Possible proton and/or PCA threat. (x) may be one of (+), (-), or ().

(x)G = If a favorable major flare develops, a moderate to high probability exists that the event may be geoeffective.

xx % = Probability of activity equalling or exceeding the given x-ray class sometime over the next number of DAYS.

WLT = Data not applicable due to the West Limb Transit of the target region.

The above chart should be used as a guide only. It represents anticipated levels of activity based on current projections of region development.

Actual conditions may, of course, differ from these projections.

SYNOPSIS:

Region 7440 marked its arrival on the southeast limb by spawning a major class M5.1/SF tenflare with a moderate Type II sweep at 21:49 UT on 02 March. This flare had an impressive LDE signature and was accompanied by a loop prominence system that was observed on the limb for several hours following the event. This region is a DKC optical group with some obvious complexity (both optically and magnetically) in the trailer spot complex. Some observatories have reported a possible delta configuration in the trailer. The NSO reported strong Ca XV emissions from this spot group as it rotated around the limb.

The major flare spawned by this region was responsible for slightly elevating proton fluence at greater than 10 MeV. Fluence increased over the last 24 hours by about 28 percent. Additional major flare activity could populate the near-Earth space environment with greater levels of energetic

has (had?) archived mods for various radios and other good stuff. I hope it's only down and not out . . .

Paul E. Compton, WA7NBS

Brain Electrophysiology Laboratory	Internet: pcompton@hebb.uoregon.edu
Department of Psychology	Bitnet: pcompton@oregon
University of Oregon	AppleLink: COGNEURO.UOR
Eugene, OR 97403-1227 U.S.A.	Phone: 503.346.6300 FAX:
503.346.4911	

Date: 3 Mar 93 15:13:28 CST

From: mvb.saic.com!unogate!news.service.uci.edu!usc!howland.reston.ans.net!
zaphod.mps.ohio-state.edu!moe.ksu.ksu.edu!engr.uark.edu!news.ualr.edu!
eivax.ualr.edu!mauldin@network.UCSD.EDU
To: info-hams@ucsd.edu

References <1993Mar1.151728.6092@wkuvx1.bitnet>, <1993Mar02.204025.12053@ssc.com>,
<1993Mar3.153306.26428@news.columbia.edu>
Subject : Re: NEED DOPPLER DF INFO

In article <1993Mar3.153306.26428@news.columbia.edu>,
mac20@cunixf.cc.columbia.edu (Michael A Cecere) writes:

> Speaking of doppler direction finding can someone give me the low-down
> on the principles involved?
>
> I mean, basically, who's moving?

Mike,

Several years ago (I wish I could be more precise) an article appeared in (as I remember) QST on an antenna called the "Dopplscant" or however one would combine the words "Doppler," "scan," and "antenna." It effectively moves a VHF or UHF receiving antenna in a circular path 300+ revolutions per second so that the resulting phase modulation of the received signal will be passed by the audio section of an FM receiver. Using a display that responds to the phase angle of the audio tone thus produced, the bearing of the received signal relative to the antenna system can be obtained. The rotation is done electrically, using a number of antennas mounted in a circle and switched to the receiver one at a time in succession.

The operation of such a system is fully automatic. Once properly calibrated to your receiver, it requires no further attention. The display, a circle of LEDs, points to the signal source and all you have to do is follow it.

A smaller and cheaper, but not automatic, direction finder for VHF/UHF can be built using two antennas and a switcher. Another QST article back there some years ago described the "Dual-Duckie" antenna that uses two rubber duckie antennas. A tone is generated in the FM receiver due to the phase shift between the two antennas as the switcher switches between them at an audio rate. The whole thing is mounted on a hand-held frame and connects to your HT. You rotate the array until you find a null in the tone level, which occurs when the two antennas are equidistant from the signal source, i.e. the line to the transmitter is the perpendicular bisector of the line between the two antennas. The switcher can be built using a few popcorn parts. All you need is a two-phase square wave to bias some switching diodes on and off. It's not even necessary to use PIN diodes; I'm told that ordinary silicon diodes work OK for receiving.

Maybe someone can look up the dates these articles appeared so we can find them at our local library.

These designs are several years old. For all I know there could be a newer, better approach to DFing than this. If so, I'd like to hear about it.

73,
Doug K5DH

End of Info-Hams Digest V93 #283
